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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,347	06/28/2001	David S. Sumida	B-4034 618348-2	6455

7590 03/03/2004

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EXAMINER
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PAK, SUNG H

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/894,347	<b>Applicant(s)</b> SUMIDA ET AL.	
	<b>Examiner</b> Sung H. Pak	<b>Art Unit</b> 2874	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicants' amendment filed 11/19/2003 has been entered. All pending claims have been carefully reconsidered in view of the amendment, however the claims are still not patentable. Please refer to Remarks for further discussion.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,3-5,9,12,13,15-17, 21,24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meissner et al (US 5,852,622) in view of Kasamatsu (US 6,288,833 B1).

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Meissner et al reference discloses a solid state waveguide with all the limitations set forth in the claims, except it does not teach the use of lutetium-aluminum-garnet (LuAG) material.

Regarding claims 1,5,13,17, Meissner et al reference discloses a solid state waveguide with all the limitations set forth in the claims, including: a core fabricated of a lasing medium, having an outer surface (Fig. 5); a cladding fabricated of a laser-inactive material (column 9 lines 10-31); said cladding diffusion-bonded to the outer surface of the core (column 3 lines 9-17); wherein the lasing medium of the core comprises crystalline or glass material doped with ions (column 9 lines 10-31).

Regarding claims 3,9,12,15,21,24 Meissner et al reference discloses the core comprising a rod having polygonal cross-section (Fig. 6).

Regarding claims 24-26, Meissner et al reference discloses the cladding enveloping all of the core material (Fig. 6).

However, Kasamatsu reference discloses the use of a LuAG material (column 9 line 66- column 10 line 11), which is known and used in the art for forming solid state laser devices. Such materials are advantageously used to produce solid state lasers that produce 900nm- 1000nm wavelength laser device.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Meissner et al device to use LuAG material. It would have been desirable to have a laser material for forming a solid state laser device capable of producing 900nm- 1000nm wavelength light.

Claims 2, 6-8, 10-11, 14, 18-20, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meissner et al (US 5,852,622) in view of Meissner et al (US 5,936,984) as discussed in the prior office action.

Meissner et al ('662) reference discloses a solid state waveguide with all the limitations set forth in the claims as discussed above, except it does not teach a central tapered section bounded by un-tapered end sections.

Meissner et al ('984) reference, on the other hand, discloses a tapered, or bottlenecked, central lasing portion bounded by circular un-tapered, or flanged, end portions (Figs. 4, 7). Meissner et al teach that such a design is advantageous over the prior art because, inter alia, it improves end coupling of input light, reduces parasitic oscillations, etc. (column 3 lines 10-24). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify '662 device to have bottleneck central portion bounded by un-tapered end portions.

### ***Remarks***

By the current amendment filed, the independent claims 1 and 13 were amended to recite a core fabricated of a "lutetium-aluminum-garnet material." Starting on page 7 of the applicants' response, it is argued that Meissner reference does not disclose the use of a LuAG material, and that the amended claims 1 and 13 are now patentable.

The examiner respectfully points out that LuAG core material in a solid state laser device is well known and commonly in the art as discussed in the previous office action. In response to the amendment, a new ground of rejection is furnished in this

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office action and a secondary reference that explicitly discloses the use of a LuAG core material in solid state laser device is cited. Therefore the claim rejection based on 35 USC 103(a) is proper.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

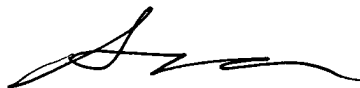
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Sung H. Pak  
Examiner  
Art Unit 2874



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